MSDS attached for: C-31 Catalyst & 473-13 Epoxy coating

sikkens

Aerospace Finishes

REC'D AUG 14 1987

473-13

DESCRIPTION	A two component epoxy coating developed as a secondary fuel vapor barrier coating for integral fuel tanks.
PRODUCT GROUP	Primers/Finishes
SPECIFICATIONS	**BMS 5-81A Type I** **DPM 3430**
SYSTEM	Chemical pretreatment 473-13 Fuel Vapor Barrier Coating
SURFACE TREATMENT	On aluminum surfaces Degrease thoroughly and pretreat metal surfaces chemically (chromic acid anodize, acid chromate pickling, Alodine 1200, Alochrome or Iridite). Maximum adhesion and performance is obtained when the coating is applied over **Sikkens** 454-4-1 Integral Fuel Tank Coating.
DENSITY	1.04 ± 0.02 gm/cc (8.6 ± 0.2 lbs/gallon
MIXING RATIO BY WEIGHT	100 parts 473-13 Fuel Vapor Barrier Coating 7.1 parts C-31 Catalyst
VOLATILE ORGANIC CONTENT (VOC)	174 grams/liter
INDUCTION TIME 25 ± 2°C (77 ± 4°F)	Not required
POTLIFE OF MIXED MATERIAL 25 ± 2°C (77 ± 4°F)	1 hour
SPRAY EQUIPMENT	Pressure pot or pressure cap gun is recommended. Fluid tip orifice: (.045 inches).
APPLICATION	Spray or brush multiple wet coats to obtain a dry film thickness of 10-20 mils.
CLEANING OF EQUIPMENT	Methyl Ethyl Ketone

DRYING TIMES **25 ± 2°C (77 ± 4°F)**	Dry to touch : 2½ hours Dry to recoat: 5 hours Dry hard : 24 hours
DRY FILM THICKNESS	250 - 500$_u$ (10-20 mils)
THEORETICAL SPREADING RATE	6 - 12 m²/gallon (63 - 126 ft²/gallon)
COLOR	Translucent clear
GLOSS 60° GARDNER	80 gloss units minimum
PACKING	1 quart and 1 gallon kits
OPTIMAL WORKING CONDITIONS	Temperature : 15 - 35°C (60 - 95°F) Relative humidity: 35 - 75%
SAFETY PRECAUTIONS	Obtain **Sikkens** Material Safety Data Sheet before using this product. 473-13 Fuel Vapor Barrier Coating Flashpoint: -5°C (23°F), flammable liquid, Class 1A, DOT: Paint UN 1263. When using, do not smoke. Do not breathe vapor/spray. In case of insufficient ventilation, wear suitable respiratory protection. C-31 Catalyst Flashpoint: 100°C (212°F) corrosive liquid, DOT: Irritating to eyes, respiratory system and skin. Take precautions to prevent contact.
STORAGE STABILITY CLOSED CONTAINER 5 - 38°C (40 - 100°F)	473-13 Fuel Vapor Barrier Coating 2 years C-31 Catalyst 2 years

The effectiveness of our systems is based on many years' practical experience and laboratory research. We guarantee that the

quality of the work performed in accordance with our system meets the **Sikkens** standards, provided that our instructions are followed carefully and the work is performed in accordance with the requirements as to good craftsmanship. We decline any responsibility, if the final result is affected by factors beyond our control. The customer has to determine the suitability of the delivered products for the intended application by using the means which normally are at his disposal.

SIKKENS AEROSPACE FINISHES DIVISION
20846 SO. NORMANDIE AVENUE,
TORRANCE, CALIFORNIA 90502

(213) 320 6800

Revised 5 March 1987

NPCA 1-84

MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Dept. of Labor "Essentially Similar" to Form OSHA-20

SECTION-I

Manufacturer's Name : **Sikkens Aerospace Finishes Division**
Akzo Coatings America, Inc.

Street Address : **20846 S. Normandie Avenue**

City, State and ZIP code: **Torrance, California 90502**

Emergency Telephone No. : **(213) 320 6800**

Product Class : Epoxy Coating

Manufacturer's code : 473-13

Trade Name : 473-13 Fuel Vapor Barrier Coating

SECTION II-HAZARDOUS INGREDIENTS

Hazardous Ingredients	CAS-Nr.	Pct. by wt.	TLV ppm	TLV mg/m3	PEL ppm	PEL mg/m3	Vapor Press.
Methyl Ethyl Ketone	78-93-3	10-15	200	590	200	590	70
n-Butyl Acetate	123-86-4	< 5	150	710	150	710	8
n-Butyl Alcohol	71-36-3	< 5	50	150	100	300	10
Xylene	1330-20-7	< 5	100	435	100	435	7

SECTION III-PHYSICAL DATA

Boiling range : 176 - 262 deg. F Percent volatile by volume: 22

Vapor Density :Heavier than air [X] Lighter than air [ ]

Evaporation Rate :Faster than ether [ ] Slower than ether [X]

Weight per gallon: 8.7 pounds

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

DOT Category: Flammable liquid
UN-1263 Paint

Flash point: 23 deg. F TCC

LEL: 1.0

OSHA Classification: Flammable liquid Class I B

Extinguishing Media: Foam, Carbon Dioxide, Dry Chemicals

Unusual fire and explosion hazards: Keep container tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions over-exposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

Special fire fighting procedures: Water may be ineffective. Water should be used to cool containers exposed to fire. Fire fighting personnel should wear self-contained breathing apparatus.

SECTION V-REACTIVITY DATA

Stability: Unstable [ ] Stable [X]

Incompatability (Materials to avoid): None Reasonally Foreseeable

Hazardous decomposition products: Carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Hazardous polymerization: May occur [ ] Will not occur [X]

Conditions to avoid: Not Applicable.

SECTION VI-HEALTH HAZARD DATA

Threshold Limit Value: See section II

The following hazards have been reported to be associated with the individual components of this product. These hazards may not all be associated with the finished product:

ACUTE:
-Prolonged or repeated skin contact may cause dermatitis.
-Eye irritant, contact may cause eye burns or corneal injury.
-**WARNING!** May cause skin sensitization or other allergic responses.
-Excessive inhalation of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness and asphyxiation.
-Eye contact may cause severe irritation, redness, tearing, blurred vision and a sensation of seeing halos around lights.
-Vapors and fumes may be irritating to upper respiratory tract.
-Can be absorbed through the skin.
-If swallowed, can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.

CHRONIC: Not known.

Medical conditions Prone to Aggravation by Exposure: None expected

Emergency and first aid procedures:
Inhalation : Move to fresh air, give artificial respiration, if necessary.
Skin Contact: Wash with soap and water.
Eye Contact : Flush with water for at least 15 minutes. Consult a Physician.
Ingestion : Drink one or two glasses of water to dilute. Do not induce vomiting. Consult physician or poison control centre immediately. Treat symptomatically.

SECTION VII-SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled:
Remove all sources of ignition. Avoid breathing vapors. Refer to protective measures listed in Section IV, V, VI, VIII and XI. Ventilate area. Remove with inert absorbent.

Waste disposal method: Incinerate in approved facility. Do not incinerate closed containers. Dispose of in accordance with Federal, State and Local pollution control requirements.

SECTION VIII-SAFE HANDLING AND USE INFORMATION

Respiratory protection: Use adequate ventilation. Use NIOSH/MSHA approved respirator device. See your safety equipment supplier for evaluation and recommendation. In confined areas use NIOSH/MSHA approved airline respirator or hood.

Ventilation: Provide sufficient ventilation to keep vapor concentration below the given TLV and LEL value.
For baking finishes, exhaust vapors emitted on heating.
Remove decomposition products formed during welding or flame cutting of surfaces coated with this product.

Protective gloves: Required for prolonged or repeated contact. Refer to safety equipment supplier for effective glove recommendation.

Eye protection : Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Eye bath and shower should be available. Use chemical resistant apron, boots or other clothing if needed to avoid repeated or frequent skin contact. Liquid may penetrate shoes and leather causing delayed irritation.

Hygienic Practices: Wash hands before eating, smoking or using washroom.

SECTION IX-SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing:
Store containers out of sun and away from heat, sparks and open flames.

Other precautions: Do not take internally. Use approved bonding and grounding procedures. Observe label precautions.
Keep closures tight and containers upright to prevent leakage.
Never use pressure to empty: drum is not a pressure vessel.
Avoid breathing sanding dust. Do not weld or flame cut an empty drum.
Do not handle until the manufacturer's safety precautions have been read and understood.

NPCA 1-84

MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Dept. of Labor "Essentially Similar" to Form OSHA-20

SECTION-I

Manufacturer's Name : **Sikkens Aerospace Finishes Division Akzo Coatings America, Inc.**

Street Address : **20846 S. Normandie Avenue**

City, State and ZIP code: **Torrance, California 90502**

Emergency Telephone No. : **(213) 320 6800**

Product Class : Amine Catalyst

Manufacturer's code : C-31

Trade Name : C-31 Catalyst

SECTION II-HAZARDOUS INGREDIENTS

Hazardous Ingredients	CAS-Nr.	Pct. by wt.	TLV ppm	TLV mg/m3	PEL ppm	PEL mg/m3	Vapor Press.
Aminoethyl piperazine	140-31-8	100	NE	---	NE	---	0.05

NE = Not Established

SECTION III-PHYSICAL DATA

Boiling range : 410 deg. F

Percent volatile by volume: Nil

Vapor Density : Heavier than air [X] Lighter than air [ ]

Evaporation Rate : Faster than ether [ ] Slower than ether [X]

Weight per gallon: 8.2 pounds

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

DOT Category: Corrosive

Flash point: 215 deg. F TCC

LEL: 1.0

OSHA Classification:

Extinguishing Media: Foam, Carbon Dioxide, Dry Chemicals

Unusual fire and explosion hazards: Keep container tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions over-exposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

Special fire fighting procedures: Water may be ineffective. Water should be used to cool containers exposed to fire. Fire fighting personnel should wear self-contained breathing apparatus.

SECTION V-REACTIVITY DATA

Stability: Unstable [ ] Stable [X]

Incompatability (Materials to avoid): Storage at high temperatures.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, ammonia.

Hazardous polymerization: May occur [ ] Will not occur [X]

Conditions to avoid: Not Applicable.

SECTION VI-HEALTH HAZARD DATA

Threshold Limit Value: See section II

The following hazards have been reported to be associated with the individual components of this product. These hazards may not all be associated with the finished product:

ACUTE:
-Prolonged or repeated contact may cause eye irritation.
-Excessive inhalation of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness and even asphyxiation.
-Eye contact may cause severe irritation, redness, tearing, blurred vision and a sensation of seeing halos around lights.
-Vapors and fumes may be irritating to upper respiratory tract.
-Prolonged contact with the skin may lead to extraction of natural oils with resultant mild irritation.
-If swallowed, can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.
-Swallowing can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

CHRONIC:
-Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids and vapors of petroleum products should be minimized.
-Overexposure to material has been suggested as a cause of the following effects in humans: liver abnormalities.

Medical Conditions Prone to Aggravation by Exposure: None expected

Emergency and first aid procedures:
Inhalation : Move to fresh air, give artificial respiration, if necessary.
Skin Contact: Wash with soap and water.
Eye Contact : Flush with water for at least 15 minutes. Consult a Physician.
Ingestion : Drink one or two glasses of water to dilute. Do not induce vomiting. Consult physician or poison control centre immediately. Treat symptomatically.

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Never use pressure to empty: drum is not a pressure vessel.
Avoid breathing sanding dust. Do not weld or flame cut an empty drum.
Do not handle until the manufacturer's safety precautions have been read and understood.

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